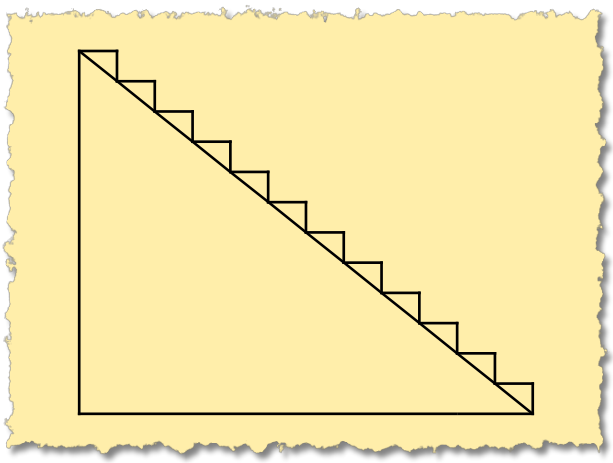
Area of a Triangle 2

1. The area underneath a staircase needs to be wallpapered, but Harry has lost his tape measure! He has estimated the lengths of the base and height and drawn a plan of the area.

He says,

I estimate that the height is between 250cm and 300cm. The base is between 300cm and 350cm.



Each sachet of wallpaper paste covers 0.5m².
What are the greatest and smallest numbers of sachets he will need?
Smallest: 2.5m x 3m = 7.5m; 7.5m ÷ 2 = 3.75m². 3.75m² ÷ 0.5m² = 7.5 sachets
Largest: 3m x 3.5m = 10.5m²; 10.5m² ÷ 2 = 5.25m². 5.25m² ÷ 0.5m² = 10.5 sachets

Not to scale

DP

2. Farmers Frank and Fred each have a triangular field.

Frank's field is the shape of a right-angled triangle. The two shorter sides, when added together, produce the same number as the area.

Fred says,

My field is also a right-angled triangle, and the shorter sides added together is the same number as the area, but it is not the same size as Frank's!

Investigate what the dimensions of both fields could be. Find 3 solutions.
Frank's field: 3m x 6m = 18m; 18m ÷ 2 = 9m²; 3m + 6m = 9m
Fred's field: 4m x 4m = 16m; 16m ÷ 2 = 8²; 4m + 4m = 8m

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